CLAIMS

1. Manually actuable inhaler (1) for pulverulent substances, in particular medicinal substances, in which, during the manual actuation, a defined discharge quantity (20') from a substance storage quantity (20) is apportioned out in a metering chamber (D) upstream of a discharge passage (21) for the purpose of airborne discharge from a mouthpiece opening (14) at the end (b) of the discharge passage (21), a piston (8) which generates the discharge airstream, together with a cavity (17) of its body portion (15), forming a substance storage chamber (SV) and the metering chamber (D), a reduced pressure which is generated during the return stroke of the piston (8) opening the metering chamber (D) toward the substance storage quantity (20), and furthermore the base of the metering chamber (D) being formed by an air-permeable membrane, characterized in that the airstream volume which results from the piston movement amounts to more than one hundred times but less than six hundred times the volume of the metering chamber (D).

2. Inhaler according to claim 1 or in particular according thereto, characterized in that the body portion (15), at an opposite end (b) from the piston (8), forms the mouthpiece opening (14).

3. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the discharge passage (21) is configured as a piston body portion inner tube (22), which extends in the center of the body portion (15) of the piston (8) - the piston being under spring loading - and the discharge quantity (20') collecting beneath the piston-side end (a) of the inner tube.

4. Inhaler according to one or more of the preceding

claims or in particular according thereto, characterized in that the manually actuated piston spring loading stroke is the discharge stroke and the discharge quantity (20') collects during the spring-triggered return stroke of the piston (8).

5. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the discharge quantity (20') collects in a recess (45) in the base (18) of the substance storage chamber (SV), and the upper edge (50) of the recess (45) alternates between a sealing position and an opening position of the piston body portion inner tube.

6. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the transfer into the opening position results from an elastic displacement of the base (18) of the substance storage chamber (SV) on account of the reduced pressure occurring behind the piston (8) during the return stroke of the latter.

7. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized by a covering (47), which is air-permeable at least in the direction of the mouth opening (14), of a hole (46) in the base (18) of the substance storage chamber (SV).

8. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the base (18) and the recess (45) of the substance storage chamber (SV) are formed by an elastic membrane, the cup inner wall of which carries an insert part (48), onto the upper edge (50) of which the piston body portion inner tube (22) touches down in a sealing manner by means of a mating closure surface

(49).

9. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the piston (8) has a piston lip (10) which faces in the opposite direction to the direction of the return stroke and engages in a sliding manner against the inner wall (11) of the cylinder (3).

10. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the permeability of the covering (47) in relation to the fineness of the grains of the powder is such that the thin-layer powder quantity which drops onto the base (18) after the first opening movement of the latter eliminates the air permeability (24) in the opening direction.

11. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the piston body portion inner tube (22) extends to just before the mouthpiece opening (14) and leaves open, toward the wall of the surrounding piston body portion material (23), an air inflow passage which extends into the substance storage chamber (SV).

12. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that a cover (19), which is permeable to the inflow air, crosses the piston body portion inner tube (22) in a supporting manner on both sides and has a central hole (40) aligned with the discharge passage (21), is provided in the upper region of the substance storage chamber (SV).

13. Inhaler according to one or more of the preceding claims or in particular according thereto,

characterized in that the discharge passage (21) narrows in a funnel shape (21') in the direction of flow (arrow y) at the discharge quantity collection location.

14. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that a valve body (43), which opens in the discharge direction, is disposed in front of the central hole (40).

15. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized by a response threshold for the manually actuated piston displacement.

16. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the response threshold is formed at an annular body (53) of the piston body portion (15) on the rear side of the piston sleeve, which annular body (53) latches into a latching groove (55) in the cylinder wall (11) belonging to the piston (8).

17. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the metering chamber (D) is formed by an end-side widening region of the discharge passage (21), which touches down onto the air-permeable membrane (47) and is lifted off during the spring return stroke.

18. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the boundary wall (58) of the metering chamber (D) widens frustoconically in the discharge direction (arrow y).

19. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the boundary wall (58) of the metering chamber (D) consists of elastic material and is formed integrally with the base (18) of the substance storage chamber (SV).

20. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized by two air inflow passages (24) for the substance storage chamber (SV), which run on both sides of the central discharge passage (21) in a common plane with the latter.

21. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the air inflow passages (24) are located in the center plane between waist-like supporting surface indentations (26).

22. Manually actuable inhaler (1) for pulverulent substances, in particular medicinal substances, in which, during the manual actuation, a defined discharge quantity (20') from a substance storage quantity (20) is apportioned out in a metering chamber (D) upstream of a discharge passage (21) for the purpose of airborne discharge from a mouthpiece opening (14) at the end (b) of the discharge passage (21), a piston (8) which generates the discharge airstream, together with a cavity (17) of its body portion (15), forming a substance storage chamber (SV) and the metering chamber (D), a reduced pressure which is generated during the return stroke of the piston (8) opening the metering chamber (D) toward the substance storage quantity (20), and furthermore the base of the metering chamber (D) being formed by an air-permeable membrane, characterized in that the metering chamber (D), in the basic position of the piston body portion (15), is open

toward the substance storage chamber (SV).

23. Inhaler, in particular according to claim 22, characterized in that the metering chamber (D) opens toward the substance storage chamber (SV) as a result of an idling stroke (LH) between the body portion (15) and the piston sleeve which forms the metering chamber (D).

24. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the base (18) of the substance storage chamber (SV) is part of the piston sleeve and rests in a sliding manner against the inner wall of the piston body portion (15).

25. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the metering chamber (D) is partially formed from a recess (45) in the piston sleeve and partially comprises a valve cone (65) which touches down in a sealing manner onto the edge (50) of the recess (45) in the metering chamber (D) and narrows in the discharge direction.

26. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the idling stroke (LH) is spring-triggered and is formed by virtue of a collar (68) of the piston sleeve projecting into a slot (69) of corresponding width on the inner wall of the piston body portion (15).

27. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the cylinder wall (11) for the piston sleeve is formed by a connection piece (59) of a baseplate (4).

28. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that a spring (12) extends on the outside of the connection piece (59), in an annular gap between connection piece (59) and outer wall (67) of the inhaler (1).

29. Inhaler according to one or more of the preceding claims or in particular according thereto, characterized in that the valve cone (65) has lips (71) which are cut free and face in the discharge direction and the cut ends of which are thickened.